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EXAMINER	
CHANKONG, DOHM	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

MN

Office Action Summary	Application No.	Applicant(s)	
	09/844,856	GARCIA-LUNA-ACEVES ET AL.	
	Examiner	Art Unit	
	Dohm Chankong	2152	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1> This action is in response to Applicant's request for continued examination. Claims 1, 7, and 9 are amended. Claims 1, 3-9, and 11-14 are presented for further examination.

2> This is a non-final rejection.

Continued Examination Under 37 CFR 1.114

3> A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10.16.2007 has been entered.

Response to Arguments

4> Applicant has amended the independent claims to recite in part that the repository is selected according to specified metrics by mapping a client address to repository addresses using a WILD protocol that runs on top of a Transmission Control Protocol. After careful view of both McCanne references [McCanne.2 - US. 6785704 & McCanne - US. 6415.323], the examiner concludes that the amendment does not overcome McCanne's teachings.

Applicant's WILD protocol is interpreted consistent with Applicant's provisional application 60|200401. The provisional describes a protocol that determines "distance"

between network devices using metrics such as average delay, average processing delay, reliability of path, and availability of the path [pgs. 12-13].

McCanne describes using a local monitoring protocol to map a client to another information object repository by utilizing the protocol to determine the candidate service node based on load and availability information; this functionality corresponds to the claimed WILD protocol [column 16 «lines 13-17»]. The monitoring protocol keeps track of various metrics such as availability of the path [column 17 «lines 48-58»]. McCanne describes selecting a network device that has the best network characteristics and therefore is the "closest" to the ARN. Thus, McCanne's local monitoring protocol is interpreted as Applicant's claimed WILD protocol.

McCanne does not expressly disclose that the monitoring protocol "runs on top" of TCP however such a feature is implied from McCanne's disclosure. McCanne discloses utilizing TCP to connect to service nodes within the network [column 15 «lines 1-6»]. McCanne additionally discloses that the ARN performs the service node selection protocol over the network. Since TCP is used as the underlying protocol in the network, any higher-level protocols, such as McCanne's local monitoring protocol implicitly "runs on top" of TCP. One of ordinary skill in the art would have reasonably inferred that the local monitoring protocol is run on top of TCP [column 17 «lines 45-47» | column 19 «lines 11-13»].

The McCanne.2 reference discloses the same technology as McCanne and therefore the above discussion applies with equal force to McCanne.2. McCanne.2 refers to CDNs which correspond to McCanne's ARNs as the CDNs perform the same functionality.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5> Claims 1, 3-9, and 11-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. Independent claims 1, 7, and 9 recite in part "...by mapping an address of the client to one or more addresses of *the information object repositories.*" However, only a single information object repository is being claimed. Therefore, the claims are rejected for lacking proper antecedent basis.

b. The dependent claims are rejected based on their dependency on their deficient parent claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6› Claims 1, 3-9 and 11 are rejected under 35 U.S.C § 102(e) as being anticipated by McCanne et al, U.S Patent No. 6.785.704 ["McCanne.2"], in view of Partridge et al, "Host Anycasting Service" ["Partridge"].

7› As to claim 1, McCanne.2 discloses a method, comprising:

receiving, at an information object repository, a request for an information object at an address identified by a uniform resource locator (URL) [column 23 «lines 14-17» | column 25 «lines 57-66» where : McCanne.2's cache corresponds to a repository]; and

mapping the URL to a corresponding anycast address for the information object [column 23 «lines 14-17 and 56-60» | column 26 «lines 25-27» where : the cache resolves the URL to an anycast address for the web servers that have the requested content], wherein the information object repository is selected according to specified performance metrics by mapping an address of the client to one or more addresses of the information object repositories using a Web Information Locator by Distance (WILD) protocol that runs on top of a transmission control protocol (TCP) [Figure 18 : McCanne.2's invention running on top of TCP/IP | column 27 «lines 1-13» | also see the response to Applicant's arguments above];

determining whether the anycast address can be resolved into a real unicast address that is uniquely identified for the information object in the Internet [column 20 «lines 21-37»];

resolving the anycast address for the information object to the unicast address for the information object, if the corresponding anycast address can be resolved into the unicast address [column 20 «lines 21-37» | column 21 «lines 9-16» | column 23 «lines 54-67»];

returning a failure if the anycast address cannot be resolved into the unicast address [column 14 «lines 46-54» | McCanne.2 does not explicitly disclose returning a failure but he does disclose relying on DNS. It is well known in the art that if a DNS is unable to resolve addresses, the DNS server will return an error to the requesting client. Thus, one of ordinary skill in the art would have reasonably inferred this functionality into McCanne.2's DNS servers as well]; and

obtaining a copy of the information object at the corresponding unicast address [column 23 «lines 54-67»].

McCanne.2, however, does not expressly disclose the resolving of the anycast address comprising sending an anycast resolution query to the anycast address according to an anycast resolution protocol. However, such a feature was well known in the art at the time of Applicant's invention. Partridge is directed towards an internet anycasting service for IP [pg. 1, abstract]. Patridge discloses a DNS resolver resolving an anycast address by sending a request (query) to the anycast address [pg. 2, ¶1 : "DNS resolvers...could send a query to a well known DNS anycast address | pg. 3, ¶2 : "...send DNS queries to the DNS anycast address"].

It would have been obvious to one of ordinary skill in the art to incorporate Partridge's anycast address protocol into McCanne's anycast system. Partridge's teachings provide would improve McCanne's system by enabling DNS resolvers to properly resolve anycast addresses by sending queries to anycast addresses.

8› As to claim 3, McCanne.2 discloses the method of claim 1 further comprising sending the information object to the client [column 23 «lines 14-23 and 54-63»].

9› As to claim 4, McCanne.2 discloses the method of claim 3 wherein the request is received at an information object repository that is topologically closer to the client than any other information object repository [column 13 «line 45»].

10› As to claim 5, McCanne.2 discloses the method of claim 4 wherein the information object repository is selected according to specified performance metrics [column 21 «lines 58-62»].

11› As to claim 6, McCanne.2 discloses the method of claim 5 wherein the performance metrics comprise one or more of: average delay from the selected information object repository to a source of the request, average processing delay at the selected information object repository, reliability of a path from the selected information object repository, available bandwidth in said path, and loads on the selected information object repository [column 21 «lines 58-62»].

12› As to claim 7, as it does not teach or further define over the previously claimed limitations, it is similarly rejected for at least the same reasons set forth for claim 1.

13> As to claim 8, McCanne.2 discloses the information object repository of claim 8 being further configured to advertise the anycast address using a network layer anycast routing protocol [column 15 «lines 9-14»].

14> Claim 9 is a claim to for a network with elements that perform the steps of the method of claim 1. Therefore, claim 9 is rejected for the same reasons as set forth for claim 1, supra.

15> Claims 1, 3-9 and 11 are rejected under 35 U.S.C § 102(e) as being anticipated by McCanne.2, in view of Bhattacharjee et al, "Application-Layer Anycasting" ["Bhattacharjee"].

16> As to claims 1, 7, and 9, McCanne.2 discloses a method, comprising:

receiving, at an information object repository, a request for an information object at an address identified by a uniform resource locator (URL) [column 23 «lines 14-17» | column 25 «lines 57-66» where : McCanne.2's cache corresponds to a repository]; and

mapping the URL to a corresponding anycast address for the information object [column 23 «lines 14-17 and 56-60» | column 26 «lines 25-27» where : the cache resolves the URL to an anycast address for the web servers that have the requested content], wherein the information object repository is selected according to specified performance metrics by mapping an address of the client to one or more addresses of the information object repositories using a Web Information Locator by Distance (WILD) protocol that runs on top

of a transmission control protocol (TCP) [Figure 18 : McCanne.2's invention running on top of TCP/IP | column 27 «lines 1-13» | also see the response to Applicant's arguments above];

determining whether the anycast address can be resolved into a real unicast address that is uniquely identified for the information object in the Internet [column 20 «lines 21-37»];

resolving the anycast address for the information object to the unicast address for the information object, if the corresponding anycast address can be resolved into the unicast address [column 20 «lines 21-37» | column 21 «lines 9-16» | column 23 «lines 54-67»];

returning a failure if the anycast address cannot be resolved into the unicast address [column 14 «lines 46-54» | McCanne.2 does not explicitly disclose returning a failure but he does disclose relying on DNS. It is well known in the art that if a DNS is unable to resolve addresses, the DNS server will return an error to the requesting client. Thus, one of ordinary skill in the art would have reasonably inferred this functionality into McCanne.2's DNS servers as well]; and

obtaining a copy of the information object at the corresponding unicast address [column 23 «lines 54-67»].

McCanne.2, however, does not expressly disclose the resolving of the anycast address comprising sending an anycast resolution query to the anycast address according to an anycast resolution protocol.

Bhattacharjee is directed towards an anycasting communication paradigm [abstract]. Bhattacharjee discloses resolving an anycast address by sending a request (query) to the anycast address [Figure 1 (pg. 1389) | Figure 2 (pg 1391) where : the anycast domain name is

analogous to claimed anycast address], which is correlated to a unicast address [Figure 1 | Figure 2 | Section 4.2 "Filter Specification" – "ADN to IP address mapping" where : the anycast address query returns an IP address to the client]. Since Bhattacharjee's anycast address query|response functionality resolves the anycast address to a corresponding IP address, Bhattacharjee's functionality is analogous to an anycast address resolution protocol.

It would have been obvious to one of ordinary skill in the art to incorporate Bhattacharjee's anycast address protocol into McCanne's anycast system. Bhattacharjee's teachings provide would improve McCanne's system by achieving proper anycast address resolution [see Bhattacharjee, pg. 1391, section 4 "Interacting with Anycast Resolvers"].

17> As to claims 3-9 and 11, see above.

18> Claims 1, 3-9, and 11-14 are rejected under 35 U.S.C § 103(a) as being unpatentable over McCanne et al, U.S Patent No. 6.415.323 ["McCanne"], in view of McCanne.2, in further view of Bhattacharjee.

19> As to claims 1, 7, and 9, McCanne discloses a method, comprising:

receiving, at an information object repository, a request for an information object at an address identified by a uniform resource locator (URL) [column 15 <lines 59-60>];

mapping the URL to a corresponding anycast address for the information object [column 15 <lines 59-65>], wherein the information object repository is selected according to specified performance metrics by mapping an address of the client to one or more addresses

of the information object repositories using a Web Information Locator by Distance (WILD) protocol that runs on top of a transmission control protocol (TCP) [column 15 «lines 1-6» | column 16 «lines 13-17» | column 17 «liens 45-47» | column 19 «lines 11-13» | see also the response to Applicant's arguments above];

determining whether the anycast address can be resolved into a real unicast address that is uniquely identified for the information object in the Internet [column 10 «lines 40-43» | column 15 «lines 1-34» | see response to arguments section above];

resolving the anycast address for the information object to a unicast address for the information object, if the corresponding anycast address can be resolved into the unicast address [column 10 <lines 36-43> | column 16 <lines 9-12 and 27-29>]; and

returning a failure if the anycast address cannot be resolved into the unicast address [column 9 «lines 28-47» where : McCanne does not explicitly disclose returning a failure but he does disclose relying on DNS. It is well known in the art that if a DNS is unable to resolve addresses, the DNS server will return an error to the requesting client. Thus, one of ordinary skill in the art would have reasonably inferred this functionality into McCanne.2's DNS servers as well].

McCanne discloses that the repository is enabled to directly service the client request [column 14 «lines 31-32»] but does not express disclose that the repository obtains the information object at the corresponding unicast address. McCanne also does not expressly disclose the resolving of the anycast address comprising sending an anycast resolution query to the anycast address according to an anycast resolution protocol [see rejection of claim 1 under McCanne.2, in view of Bhattacharjee].

McCanne.2 is directed towards a content distribution system and specifically moving data streams from content producers to requesters of those streams. McCanne further discloses an information object repository that is enabled to directly obtain a copy of an information object at a corresponding unicast address [column 23 «lines 14-23 and 48-67»]. McCanne.2's cache corresponds to an information object repository, that interprets the URL request for an information object and subsequently retrieves the object from a particular Web server if the object is not currently located in the cache. It would have been obvious to one of ordinary skill in the art to modify McCanne with McCanne.2's enhanced repository capabilities. As discussed McCanne does disclose that the repository is capable of directly servicing client requests but was silent as to the functionality of such a capability. McCanne.2 clearly provides a teaching of such functionality that would enable McCanne's repository to directly retrieve requested information objects from a server.

20> As to claim 3, McCanne discloses the method of claim 1 further comprising sending the information object to the client [column 16 <lines 9-12>].

21> As to claim 4, McCanne discloses the method of claim 3 wherein the request is received at an information object repository that is topologically closer to the client than any other information object repository [claim 10 where: the nodes in the anycast group are equivalent to an information object repository].

22> As to claim 5, McCanne discloses the method of claim 4 wherein the information object repository is selected according to specified performance metrics [column 17 <lines 48-58 and claim 8].

23> As to claim 6, McCanne discloses the method of claim 5 wherein the performance metrics comprise one or more of: average delay from the selected information object repository to a source of the request, average processing delay at the selected information object repository, reliability of a path from the selected information object repository, available bandwidth in said path, and loads on the selected information object repository [column 17 «lines 48-58» and claim 8].

24> As to claim 7, as it does not teach or further define over the previously claimed limitations, it is similarly rejected for at least the same reasons set forth for claim 1.

25> As to claim 8, McCanne discloses the information object repository of claim 8 being further configured to advertise the anycast address using a network layer anycast routing protocol [column 12 <lines 44-54> and column 20 <lines 40-52>].

26> Claim 9 is a claim to for a network with elements that perform the steps of the method of claim 1. Therefore, claim 9 is rejected for the same reasons as set forth for claim 1, supra.

27> Claim 11 is a claim for a network with an element that performs the step of the method of claim 4. Therefore, claim 11 is rejected for the same reasons as set forth for claim 4, supra.

28> As to claim 12, McCanne discloses the network of claim 11 further comprising a Web router configured to select the information object repository that is closer to the requesting client than any other of the number of information repositories in the network without regard as to whether the information object is actually stored at the selected information object repository [column 19 <lines 14-26> and column 20 <lines 55-58>].

29> Claim 13 is a claim for a network with an element that performs the step of the method of claim 5. Therefore, claim 13 is rejected for the same reasons as set forth for claim 5.

30> Claim 14 is a claim for a network with an element that performs the step of the method of claim 6. Therefore, claim 14 is rejected for at least the same reasons set forth for claim 6.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dohm Chankong whose telephone number is 571.272.3942. The examiner can normally be reached on Monday-Friday [8:30 AM to 4:30 PM].

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bunjob Jaroenchonwanit can be reached on 571.272.3913. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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